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BASE ALLOTMENT OR QUOTA PLANS USED BY FARMERS' COOPERATIVE MILK ASSOCIATIONS

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COOPERATIVE RESEARCH AND SERVICE DIVISION

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INTRODUCTION

One of the earliest uses and probably the most widespread use of marketing allotments or quotas for producers has been in the marketing programs developed by farmers' cooperatives for local fluid-milk markets. Surplus problems are unusually acute in fluid-milk markets owing to the perishable nature of fluid milk and to the fact that seasonal variations in fluid sales normally do not run parallel to seasonal variations in production or receipts. It is essential to the stability of prices and sales that the surplus be kept under the control of the producers, and that the burden or cost of carrying the surplus be shared by all producers on a fair basis.

Allotment or quota plans have been developed by milk cooperatives to help bring about such a condition. The plans developed in separate markets have been given a variety of names -- base plan, rating plan, base and excess plan, basic-surplus plan, quota plan, surplus plan, and others. In each case, some form of quota or allotment has been assigned to each producer to denote his share in the milk market.

Class-use or classification prices have also been used by milk cooperatives as a method of attack on these same surplus problems. Class-use price plans and allotment or quota plans may tend to merge in actual practice, as will be pointed out below, but it facilitates analysis to consider them separate mechanisms. Fundamentally, allotments or quotas relate to the method of distributing the sales returns among individual producers. Class-use prices, on the other hand, relate to the method of selling milk to dealers. Under a class-price system, each milk dealer is charged for milk according to the product-use made of it instead of being charged one flat price for all milk purchased. This prevents a dealer from buying at surplus prices any of the milk which he sells in fluid form. Likewise, it prevents a dealer from having to pay a high price for milk for which he has no fluid sales outlet and which must go into the manufacture of other dairy products.

NOTE: Much of the information in this report was furnished by cooperative milk associations through answers to letters and a mailed questionnaire on the subject. Leland Spencer, Cornell University, Ithaca, N. Y., supplied much of the information on markets in that State, and Ralph W. Sherman, Ohio State University, Columbus, Ohio, data on several Ohio markets.

Generally the use of a quota plan for distributing the sales returns in a milk market involves the following: (a) Assigning to each producer for some time to come a specific quota of milk, determined by his past shipments; (b) determining for each pay period the quantity of quota milk and the quantity of excess over quota that each producer has delivered; (c) determining each pay period one price to be paid producers for quota milk or for a percentage of quota milk, and another price for all other milk; and (d) paying each producer the quota price for his quota milk and the excess price for his excess.

In the absence of any such plan, each producer presumably receives a uniform pool price for each unit of his milk, regardless of how large or how small the total volume he delivers or how much it varies from time to time. This price is the same for every producer participating in the pool. In other words, each producer receives a share of the sales returns from surplus milk and from fluid milk proportionate each pay period to the total volume he delivers. Under a quota plan, on the other hand, each producer's share of the fluid market is predetermined. His share of the surplus market depends on his own action. The average return per unit for all his milk varies with the quantity of excess over quota which he delivers.

This brings out clearly the principal objectives of quota plans. By paying lower prices for surplus, the plans are designed to discourage the shipment of an unduly large quantity of surplus. By paying a higher price for quota milk, they are designed to encourage all producers to deliver their full quota at all times and thus to insure an adequate supply at all seasons. By assigning quotas according to past shipments, the plans are designed to assign the preferred portion of the market to those producers who have shown an ability to supply the milk. The purpose of quota plans, then, is to distribute the returns in such a way as to promote fairness among individual producers, and at the same time to encourage some change from the pattern of milk receipts found in markets not thus regulated.

This report deals briefly with experiences in selected milk markets in the use of allotment or quota plans. It has been prepared in answer to specific requests for such information from several milk associations which are now considering adoption of some type or quota plan or modification of the plan they are now using. In no sense does it represent a complete survey of the subject. Rather, it is designed solely as an introductory approach to be followed later by a more detailed and comprehensive study.

HISTORICAL DEVELOPMENT OF BASE OR QUOTA PLANS

During the last two decades there is little doubt that every major milk cooperative and many smaller associations have given serious consideration to the adoption of some type of base or quota plan for their market. Many cooperative leaders considered a base plan to be an absolutely essential part of their marketing program during much of this time. As a result, some kind of base or quota plan has been tried in a high percentage of the sizable milk markets.

The plans adopted in Baltimore (page 16) and Philadelphia (page 17) have probably received the greatest amount of publicity and have been credited generally with being the first well-developed market-wide plans. 1/ The base plan was adopted in Baltimore by the milk cooperative in 1918 and used first in January 1919. In Philadelphia a plan was adopted late in 1919 and it was first used in January 1920. Adoption of a similar type of plan began in other markets shortly after these first experiments, and largely as a result of the success claimed for the plan in these two markets.

Out of 162 markets for which information is available, bases or quotas were being used in 101 as of January 1940. In 31 other milk markets, bases or quotas are not used now, but are known to have been used at some previous time. Bases have never been used in a number of markets, although among 90 cities with a population of 100,000 or more, on which data are available, only 14 have witnessed no trial of some plan of this type (table 1).

1/ The question of priority is open to some question in view of earlier developments in such markets as Boston, Los Angeles, San Diego, and Cincinnati. In each of these markets there appears to have been in force, for some time prior to the first use of bases in Baltimore and Philadelphia, some method of assigning a quota of milk to each producer and discounting his price if this quota were exceeded. Also, private dealers in several markets have introduced similar schemes before formal quota plans were developed by the cooperative association.

Table 1 - Experience in 162 Milk Markets with Bases or Quotas for Pooling Sales Returns, January 1940 1/

Size of Market 2/ (1930 population)	Number of Markets: On which information is available	Now using bases or quotas	Not using Bases or Quotas: Were used previously	Were never used	Indefinite	Total not using
1,000,000 or over	9	3	6	-	-	6
500,000 to 1,000,000	10	7	1	2	-	3
200,000 to 500,000	33	20	7	5	1	13
100,000 to 200,000	38	22	10	5	1	16
Under 100,000	72	49	7	7	9	23
Total	162	101	31	19	11	61

1/ Bases or quotas reported do not always include all producers in the market or cover all months of the year.

2/ Metropolitan district population for all markets of more than 100,000 except where such districts embraced distinct markets. U.S. Department of Commerce, Bureau of the Census. Fifteenth Census of the United States, 1930. v. 1: Population tables 9 and 10.

The following listing shows a number of the larger milk markets in various sections of the country which were classified in each of these three categories:

A - Market Areas in Which Bases or Quotas Are Now Used

Los Angeles, Calif.	Washington, D. C.	Omaha, Nebr.
Detroit, Mich.	Kansas City, Mo.	Richmond, Va.
Baltimore, Md.	Hartford, Conn.	Providence, R. I.
Cincinnati, Ohio	Seattle, Wash.	Dayton, Ohio
Milwaukee, Wis.	Houston, Texas	San Diego, Calif.
	Syracuse, N. Y.	Chattanooga, Tenn.

B - Market Areas in Which Bases or Quotas Were Used Previously

Chicago, Ill	Pittsburgh, Pa.	Indianapolis, Ind.
Philadelphia, Pa.	St. Louis, Mo.	Louisville, Ky.
Boston, Mass.	Buffalo, N. Y.	

C - Market Areas in Which Bases or Quotas Have Never Been Used

St. Paul, Minn.	Superior, Wis.	Muncie, Ind.
Scranton, Pa.	Oklahoma City, Okla.	Dubuque, Iowa

Trends in Number of Markets Adopting Plans

The approximate dates on which base or quota plans have been introduced are available for 115 of the 132 markets in which such plans are known to have been used. These dates, together with the number of these markets in which plans were in effect at the end of each year or abandoned during the year, are shown in table 2. While there is some difference of opinion on the year base plans were first used, whatever errors have been made probably are not large enough to affect materially the trends shown.

These data show that bases or quotas were being used in more and more markets steadily during the decade of the 1920's. By the end of 1929, some type of base plan was being used in 48 of these 115 markets. About one-third of these were secondary markets served by the larger associations in New York, Philadelphia, Boston, Detroit, and Pittsburgh. The banner year was 1930. That year the total number of markets using bases increased to 67 as adoption of these plans took place in widely scattered cities, large and small. Bases were reintroduced during that year into Detroit and Dayton, and used for the first time in Boston, Indianapolis, St. Louis, Des Moines, and San Francisco. The period of widespread adoption continued through 1934.

This expansion in the use of base plans was undoubtedly stimulated by the desires of the cooperatives during the general depression to protect their fluid milk price levels, and to offset the effects of declining sales and increasing milk receipts. It was influenced also by the activities of State and Federal milk control agencies. Of the 30 plans started in these markets during 1933, 1934, and 1935, at least 16 were started under some form of Government control -- 11 under Federal and 5 under State control.

Quotas were also abandoned in 35 of these markets during this 5-year period, 1932 to 1936. In 12 of them, approximately one-third, the abandonments came with the introduction of governmental control, in 8 under State control regulations, and in 4 under Federal programs. In 5 other markets quotas were abandoned as soon as or shortly after Federal control programs had been withdrawn.

Reasons for abandoning these plans were numerous. Base plans became a point of attack for minority groups. It was impossible to grant increases in bases and still to maintain a reasonable relationship between total bases and fluid sales because fluid sales were declining. Some efforts to change the plans so that they would hold down total receipts, as well as encourage more uniform receipts, made the plans unduly complicated. Finally high bases came to mean less and bases also became frozen. Low-base producers withdrew from the pool; new producers coming on the market avoided the association

Table 2 - Approximate Years in Which Bases or Quotas Were Introduced and Abandoned in 115 Milk Markets 1/

Calendar year 2/	Number of Markets in Which Bases or Quotas Were - In effect at beginning	Introduced during year	Abandoned during year	In effect at end
1920	2	6	-	8
1921	8	3	-	11
1922	11	10	-	21
1923	21	4	-	25
1924	25	4	-	29
1925	29	6	-	35
1926	35	4	-	39
1927	39	2	2	39
1928	39	5	1	43
1929	43	5	-	48
1930	48	22	3	67
1931	67	5	-	72
1932	72	11	4	79
1933	79	8	7	80
1934	80	17	6	91
1935	91	5	9	87
1936	87	4	9	82
1937	82	4	1	85
1938	85	3	3	85
1939	85	4	3	86
Total		132 3/	48 3/	

1/ Data are not available on 17 other markets which are known to have had some experience with bases or quotas.

2/ Supplied in most cases by the milk cooperatives in the various markets.

3/ Includes 19 duplications due to bases being temporarily abandoned and later reintroduced.

and its low base for new producers. All these developments caused opposition to bases among members and leaders of many cooperatives. Wholesale abandonments began. This tendency, however, has been halted by increasing sales and other factors, and current developments indicate a renewal of the upward trend in number of markets using a base plan.

The Influence of Governmental Control Programs

With this recently renewed interest in base plans, the attitude of State and Federal regulatory agencies toward such plans is a topic of lively interest. Data are available to show what the experiences have been under control programs. In connection with Federal control, it has already been pointed out that bases were started in 11 markets during the period 1933-1935. They have been started in 3 other markets under Federal control since 1935. In addition, the control programs in several other cases have allowed or provided for revising and strengthening the plans already in existence. On the other hand, bases have been discontinued under Federal programs in 4 markets, and in 4 others the plan in effect when the Federal program came into the market was not included in the regulations. In 2 of these markets, the cooperatives continue to use bases.

Information is less complete on the activities of State control agencies in this regard. Policies of different States vary, although there is often a uniform policy in each State having a control agency. In several cases a permissive policy has been adopted, leaving the question up to the preference of producers in each market or at each plant. Available data indicate that bases have been adopted in 9 markets while under State control and abandoned in 10 markets with the advent of or while under a State control program. This is exclusive of Ohio where the control law is no longer in effect. Under its operations from 1933 to 1935, base plans were started in many smaller markets, but many of them were abandoned when the law expired.

The current situation with respect to control programs and base plans is indicated by the data in table 3. For this group of 162 markets, 27 are under Federal programs and 62 under State programs. Bases are being used in 14 of the Federal group, or about half of the total, and in 44 of the State group, or 70 percent of the total. The percentage using bases is about 60 for the markets not under control, and 62 for all the markets included. It appears from this that where local groups want a base plan and where a suitable plan can be worked out, control agencies are willing at least to include bases in the pooling system of the regulatory program.

Table 3 - Relation Between the Use of Bases or Quotas and the Presence of Governmental Control Programs in 162 Milk Markets, January 1940

Type of control program	Population of market	Number of Markets: On which information is available	Using bases or quotas	Not using bases or quotas
Federal	Less than 200,000	13	9	4
	200,000 or more	14	5	9
	Total	27	14	13
State	Less than 200,000	38	28	10
	200,000 or more	24	16	8
	Total	62	44	18
No Control	Less than 200,000	63	37	26
	200,000 or more	16	10	6
	Total	79	47	32
All Markets 1/	Less than 200,000	110	71	39
	200,000 or more	52	30	22
	Total	162	101	61

1/ Net totals are different from apparent sums since there are both Federal and State programs in 6 markets; 4 of them use bases and 2 do not.

VARIATIONS IN BASE PLANS BETWEEN MARKETS

There are almost as many kinds of base or quota plans now as there are markets using bases or quotas. Even in many individual markets the plan is changed in some important respect almost every year. In fact as the use of bases has spread into more markets, the practice of paying producers separate prices for base or quota milk and for surplus or excess milk has become an idea rather than one plan with some slight variations. It has become a pooling mechanism which can be molded into many distinctly different forms. As found in milk markets today, these forms differ from each other principally in: (1) The frequency with which entirely new bases are established; (2) the treatment accorded new producers; (3) the extent to which current adjustments and transfers in bases are made; (4) the timing and the length of the base-forming period; (5) the extent to which total bases exceed fluid-milk sales; (6) the number of months during the year in which bases are used; and (7) the extent to which the base plan is related to other phases of the marketing program of the local association.

Open Versus Closed Base Policies

The frequency with which entirely new bases are established is closely related to the fundamental objective of the plan. "Open" plans usually provide that each producer shall earn an entirely new base every year, unrelated to the base previously held. "Closed" types, on the other hand, may carry the same base assignments, with only minor adjustments, for as long as 10 or 15 years. Between these two extremes, bases may be held for 2 or 3 years at a time, or there may be provision for fairly large adjustments at stated intervals. Such adjustments have the effect of making the plan more open. Encouragement of more uniform seasonal shipments is the primary effect of "open" base plans, with little if any effect in limiting total shipments. "Closed" bases, on the other hand, discourage increases in total shipments, but, unless there is a penalty for under-base deliveries, may have almost no effect on seasonal variations.

Almost half of the milk cooperatives reporting on this point were using an "open" base policy under their most recent plan. Entirely new bases were assigned at least one each year in 41 cases out of a total of 83. Less than half as many, or 17 out of 83, were using a "closed" base policy, carrying the same bases over from year to year with only minor adjustments if any. The other 25 did not establish entirely new bases for all producers each year, but provided for major adjustments each year for those producers whose deliveries were out of line with their base assignment.

Whether the bases are "open" or "closed" usually has a great deal to do with the policy regarding new producers and the policy followed in base adjustments and transfers. In the first place, of course, if every producer is to earn an entirely new base every year, the rules governing new producers and current changes in base are much less important because any inequalities can be ironed out fully during the next base-forming period. If the next base-forming period is 10 years away, it is much more important to have some reasonable policy to insure fairness to these producers.

Bases For New Producers

There is almost always a probationary period of from 1 to 6 months for new producers coming on the market, during which time they are paid surplus prices for all their milk. During this period they are presumed to be demonstrating among other things their ability to produce milk with sufficient regularity and of adequate quality to qualify as regular shippers. After this period, they are assigned a base or quota calculated as some percentage of their average deliveries during the probationary period. This percentage equals or is lower than the ratio of base deliveries to total deliveries for the shippers already in the market. In a few cases - mostly where new producers have no alternative but to sell through the agency using bases and therefore to accept whatever base is assigned - new producers are given very low bases and must deliver a sizable percentage of excess over base for from 3 to 5 years or more in order to earn a base comparable with the bases of old shippers.

Base Adjustments and Transfers

Current adjustments in bases and transfers of bases among producers constitute an outstanding administrative problem of base or quota plans. The board of directors or a special base committee is usually in charge of such matters and attempts to set forth definite rules governing the conditions under which bases may be reduced, increases allowed, and transfers approved. It has proven practically impossible, however, to cover by a reasonable number of rules all the special situations in which producers find adjustments or transfers desirable. As will be pointed out later, some cooperatives have attempted to meet their problems by approving the sale of bases, others by scheduling regular quarterly adjustments, others by setting aside a part of the total base quantity to be used for this purpose, and others by giving their base committee rather broad authority to change bases. Penalties for under-base deliveries are usually more severe when bases are open and total bases are closely related to fluid sales. Bases are usually associated with the herd; but they may be entirely separate from the herd, and associated with the farm or with the producer's status of tenant or owner.

The Base-Forming Period

The length and timing of the base-forming period probably shows more variation than any other factor. Data in table 4 show the length of the base-forming period for 82 markets on which data are available for the plan last used. As shown here, the length of the period varies from 2 weeks to 36 months, with 3, 4, 5, 6, and 12 months the most common. A few use only 1 month and a few compromise by using 9 months. Eight markets used a 2-, 3-, or 5-year average for selected months, and five used the entire year's record for 2 or 3 years.

As to the length of the base-forming period, the entire year was selected in 14 markets, a specified number of the lowest months of receipts for the individual producer in 6, and the lowest months of receipts for the market in 5. In 9 markets, the length of the period was not specified. For the remaining 48 markets, specific months were designated and the fall months predominated. November was included as one of the base-forming months in 41 of these 48 markets, October in 39, December in 27, and September in 24 markets. Five other months were also important, January, February, and August each being included in 19 cases; July in 18; and March in 17. May was a base-forming month in only one of the 48 markets using designated months, June was a base month in 2 markets, and April in 5 of the 48 markets.

Table 4 - Length of Base-Forming Period Under the Base Plan Last Used in 83 Milk Markets, January 1940

Months in base-forming period	Number of markets using one base-forming period for -				Total markets
	1 year	2-year average	3-year average	5-year average	
1/2	1	-	-	-	1
1	4	-	1	-	5
2	1	-	-	-	1
3	13	1	1	-	15
4	10	-	-	-	10
5	9	-	2	2	13
6	14	-	1	-	15
7	1	-	-	-	1
8	1	-	-	-	1
9	5	-	-	-	5
10	1	-	-	-	1
12	9	3	2	-	14
All periods	69	4	7	2	82

The Quantity of Base Milk Allotted

The sum of all bases or quotas assigned to producers is kept closely related to fluid sales in many markets, but is so large in others that total receipts are sometimes less than assigned base. In 64 markets included in this study, the sum of all bases was equal to fluid sales in 26 markets or less than 15 percent above them. In half or 19 of the others, bases were between 15 percent and 30 percent above, and in the other 19 markets were more than 30 percent above these sales.

Opinions differ on the advantage of keeping the sum of all bases somewhere near if not equal to fluid sales. When bases are low the price for base milk can be higher, and a given quantity of base has more significance to the producer in terms of the net price he will receive. With larger bases, almost the same effect can be accomplished by paying base prices for some percentage, rather than for all base milk delivered. The more usual practice, however, is to pay a lower price for all base milk, making it a base pool price rather than a price equal to the class I price. Larger bases in relation to sales have become more common as the plans have been used longer, and as new health regulations have required milk for other uses than fluid milk to come from inspected sources. Many cooperative leaders now feel that bases should cover fluid-milk and fluid-cream sales and also a small operating reserve quantity to cover day-to-day variations in sales.

Bases for Surplus Months

As a general rule now, if bases and quotas are used at all, they are used for every pooling period throughout the year. Out of 87 markets reporting on this point, only 15 regularly discontinue use of their quotas for part of each year. In these cases, the bases are effective during the seasons when surplus is normally greatest. For the rest of the year, the sales returns are pooled and one uniform price is paid for all milk of every producer in the pool. In several other markets which use bases or quotas regularly, the plans are suspended now and then for 1, 2, or 3 months to meet a temporary condition of short supplies. This is usually accompanied by an educational campaign urging members to ship more milk.

Bases and the General Marketing Program

Other variations in base or quota plans involve the type of pool with which they are used, the method of selling milk, and other phases of the price program. Information for 86 markets shows 41 cases where bases are used with association pools, 30 cases with individual dealer pools, and 15 cases with market-wide pools. With

the third type, or market pool, some central agency calculates each pay period one price for base milk and one for surplus to be paid all producers in the market. Under the dealer type of pool the base price or the percentage of base paid for at the top price is likely to be different for producers shipping to separate dealers. In fact, it will be different unless separate dealers use their base milk receipts in exactly the same way, or unless the base plan is also used as the method of selling milk to dealers and they agree to pay a certain price for all base milk received regardless of how they use the milk. In the same way base prices or base percentages are likely to be different for members of separate associations or between members and nonmembers when association pools are used.

Methods of Selling Milk Under Base Plans

This brings up again the matter of bases or quotas and the method of selling milk to dealers. In theory, at least, there are three methods of sale possible while using bases as a method of distributing the sales returns: (1) all milk may be sold to dealers on a "flat-price" basis without regard for the way they use it; (2) base milk may be sold to dealers at one price and surplus at another, with some effort made to maintain a rough but uniform relationship between the quantity of base milk a dealer buys and the quantity of his fluid sales; and (3) milk can be sold to dealers on a formal "class-use" price basis, with sales regularly reported and audited.

The first method has never been used and would not be logical with bases because it gives no tangible evidence that one part of the milk supply has a higher value than the other. The second method - selling base milk to dealers as such - was being used in 20 out of 86 markets reporting on this question. In the other 66 markets bases or quotas were a part of the pooling system but the milk was sold to dealers under formal class prices entirely unrelated to the existence of bases.

So far as available information indicates, the second method listed above has been used only when the cooperative or other market agency had been unable to obtain current and accurate sales reports from dealers. It represents the closest approach to class prices which could be attained when dealers were unwilling to submit to a sales audit. It is significant that 16 of the 20 markets using this method of sale were also using individual dealer pools, and in at least half of them the dealers played a big part in formulating the rules for setting and adjusting producer bases. The only advantage the method appears to have at all is that dealers may try harder to sell more fluid milk when the quantity for which they are paying the top price is fixed in advance. This may not be an advantage, though, unless the increased sales are reflected back to producers. Also, it may be offset by a tendency to cut

prices in order to gain sales, and more important perhaps, by the difficulty the cooperative may have under the method in finding dealer outlets for all its members.

Bases and Other Price Differentials

Base-rating plans are also related in various ways to other phases of the marketing program for milk as it affects producers. In markets where there are secondary assembly points and charges are made against producers for handling and freight costs, these charges either apply only to base milk, or are much higher for base milk than for excess milk. Butterfat differentials may be higher for base milk. In one case in particular, even the local trucking charges from farm to plant differ for base and excess milk. In several cases the assessment for advertising is levied only on base milk, and in a few instances the association brokerage or financial retain is limited to base milk or is higher on base than on surplus.

It should be clear from this discussion that the term "base-plan" or "quota plan" as applied to milk marketing has no rigid or narrow meaning. It refers to a general method of distributing sales returns or of prorating fluid-milk sales among producers which can be and has been expressed in a large number of individual plans. Most of the plans differ from one another in some important respect. There has been a tendency, however, for certain patterns to develop or for certain features to become associated together. Thus, for example, when a "closed" base policy is adopted, the tendency is for other policies to take a particular course different from that which develops when bases are kept open. These facts are illustrated in detail by the base plans used in the selected markets described in the following section.

TYPES OF BASE PLANS USED IN SELECTED MARKETS

This section contains a description of the base or quota plans used in a few selected milk markets by farmers' cooperative marketing associations. It shows how the factors discussed in the preceding section have been fitted together into a complete plan for each market, and how these plans have been modified or changed from year to year. 2/

The base plans which are now being used in Baltimore and Detroit and which were used for extensive periods in Philadelphia, Chicago, and Pittsburgh are of the most common type. In each of these markets members of the association were assigned a base in

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2/ A more detailed analysis than has been attempted here would be necessary to show why the various changes have been made.

terms of pounds of milk for a year or more in advance. Such bases were equal to a percentage, generally ranging from 70 to 100, of the producer's deliveries during the previous fall - usually for the 3 months. Other city markets which have used a plan of similar type include Washington, Boston, St. Louis, Dayton, Milwaukee, and Louisville.

A major variant of this plan has been used rather widely in Richmond, Akron, Oakland, San Diego, and also, as an optional arrangement, in Boston and other New England cities. In these plans the producers' average deliveries for an entire year are used to calculate the bases or quotas. None of these plans is described here, because in every other essential feature they are similar to those in the five markets named above. In both cases, the bases are intended to be in effect every month in the year and the same bases are held for a year or longer. Producers receive one price for base milk and another for surplus milk delivered.

Base plans of another type are used in Cincinnati and in Kansas City. Regular major adjustments in individual bases are made at 3-month intervals and a rigid relationship is constantly maintained between the sum of all bases and fluid sales. Otherwise, these plans are similar to the other general type first mentioned.

A third and somewhat different approach is typified by the plans used in Chattanooga and in the Connecticut markets. In these markets, bases or quotas are used in pooling systems for only a part of the year - 6 and 5 months in these two cases. The bases are earned or established during the short production season and then used in the surplus season which follows.

Different still is the procedure followed in Syracuse and Albany, N. Y., and formerly used also by the cooperatives in such other markets as Rochester, Buffalo, to some extent in Cleveland and Columbus, Ohio, and in Connecticut markets. The characteristic feature of these plans is that producers receive price premiums on all their milk if their deliveries are within a specified range of their base or quota. The Syracuse plan is described later in this section. In some other markets using the same plan, the procedure has been varied by making it possible to earn the premium only in specified months, and by allowing the producer to set his own quota every year instead of having it calculated for him from past deliveries.

Three other procedures are deserving of some mention and will be briefly discussed on page 28.

Baltimore

The base and surplus plan introduced in Baltimore in January 1919 and continued without interruption since that time has been characterized by fairly rigid rules and infrequent changes in its essential features. The bases established in 1925 continued to be used with only slight modifications until 1939, although an open policy was followed before 1925. In this 14-year interval bases were assigned new producers as they came on the market, and there were several adjustments for old producers. For example, there were two flat reductions of 5 percent and one increase of 10 percent. Except for these, however, bases were not changed unless fall deliveries of the individual were unusually low or unusually high.

Average deliveries during the fall months have been used throughout in determining the new bases for producers. The bases each year until 1925 were equal to deliveries during the previous fall. In 1925 the fall deliveries for 1921, 1922, and 1933 were averaged, and in 1939 the new base assigned each producer was 82 percent of his average fall deliveries in 1936, 1937, and 1938.

The base plan was also used as the method of selling milk to Baltimore dealers until 1927. Dealers agreed to pay one price for all base milk received, and a lower price for all excess milk received, regardless of how they used this milk. To protect themselves, of course, both the dealers and the association tried to maintain an approximate equality between the quantity of base and the volume of fluid sales. In 1927 the association introduced class-use prices as their selling method. At the same time an association pool was started with an equalization account so that all members would receive the same base price or the class I price for the same percentage of base, regardless of which dealer purchased their milk.

Producers were also assigned a "second-base" from September 1932 to July 1936. Their "first-base" was presumed to represent their share in the association's sales of class I or fluid milk, and their "second-base" to represent their share in class II or fluid cream sales. Second-bases were calculated as a percentage of first-bases, and handled in a similar way. Class I prices were paid for whatever percentage of first-base receipts were sold as class I; class II prices for whatever percentage of second-base receipts were sold as class II; and the balance of the money received by the association or due it for all its milk was distributed pro rata over all other milk received.

Throughout the entire period that the association's base plan has been in effect, it has been far from lenient either with reference to new producers or to transfers of bases between producers.

It has made practically no individual adjustments in bases to meet peculiar conditions on individual farms, but has tried to cover all such possibilities with base rules.

New producers joining the association have been given the option since September 1936 of being paid 1 cent per gallon below the association's weighted average price instead of accepting a base and being paid base and surplus prices. If they accept the blended price option, these producers must continue under it for 3 years. Relatively few producers have chosen the option.

New producers who do not elect this option receive 1 cent per gallon below the blended price their first year in the market and then are assigned a base for their second year, calculated on their first fall deliveries. The percentage of this fall average which they receive as base depends on sales, but is not less than 50 percent. For the third year, they get a new base not less than 60 percent of second fall deliveries, and in the fourth year they qualify as old producers.

Base can be transferred only to members of the same family or may go with the sale of the farm and the herd, provided the seller contracts not to reenter the market for 12 months. In any case, the association must approve the transfer, and the policy has been not to allow bases to be combined under any circumstances.

Philadelphia

The base plan introduced into Philadelphia in January 1920 was similar in many respects to the early Baltimore plan. An open base policy was followed for the first few years, with each producer's base equal to his average deliveries during the last 3 months of the previous year. Important changes in the Philadelphia plan began to be made in 1927, and bases were discontinued under State control in January 1936. The same type of base plan was also used during most of this time in several large markets in Pennsylvania, New Jersey, and Delaware, in which the Philadelphia milk cooperative represented producers.

The policy of open bases followed since 1920 began to be modified in 1927. Bases for 1927 could be either the 1925 or 1926 fall average. Bases for 1928 were the average of 1926 and 1927 fall deliveries. Bases for 1929, 1930, and 1931 were in each case equal to the average of fall deliveries during the 3 previous years. The 1931 bases were continued for 1932. Bases for 1933 and the early part of 1934 were calculated by averaging selected month's deliveries with the base for the previous year. New bases were assigned early in 1934 when a State control program was introduced. For the balance of 1934, each producer's base was equal to his average

deliveries during the entire years 1932 and 1933. Bases for 1935 were equal to January-August 1934 deliveries. Bases were discontinued in January 1936.

Despite the fact that producers were given a chance in every year except 2 out of 17 to increase their bases, a liberal policy toward individual adjustments in base during the year was followed during most of this period. The bases of as many as 1,500 members were adjusted in some years, in response to requests from farmers for special consideration.

New producers as a rule received surplus prices for all their milk for the first 30 days, then a percentage of this 30-day average as their temporary base. They were treated as other producers after their first base-forming period. This temporary base percentage was 50 at first, then raised to 70 and 80 during the late 1920's, but reduced to 50 again after 1930.

The relationship between the base plan on the one hand and the class-price system, the general type of pool, and the grade A premium system on the other, was complex throughout in Philadelphia. The association bargained for one price to be paid for base milk and another for excess milk until 1931. The top price was paid for all milk delivered during the base-forming months until 1926. There were periods of temporary shortages in the market in the late summer and early fall in most of the years up to 1930 and during these periods the dealers often paid the top price for more than 100 percent of base. Also after 1926 there were temporary periods when dealers claimed that receipts of base milk greatly exceeded fluid sales so that they were able to pay the top price for only a part of the base milk received.

Formal class prices were introduced in 1931, and, under the new system, class I prices were paid for whatever percentage of base milk was sold that month as fluid milk, and surplus or class II prices paid for all other milk delivered. It is reported, however, that the class I percentage each month was calculated on "base milk assigned" but was paid on "base milk delivered." Since some producers usually fail to deliver all the base assigned to them, this gave an undue advantage to the dealers. Under the control programs which came in 1933 and 1934, this situation was largely corrected. Sales reports were audited regularly and the base percentage calculated from these figures. Dealer pools were continued, however, so that the class I percentage might vary between producers shipping to different dealers.

Chicago

The Pure Milk Association introduced bases in the Chicago market in 1929 and continued to use them until 1939 when the new Federal control program provided for a market-wide straight pool or blended price method of settlement. The base plan used in Chicago was characterized by semiclosed bases, the direct purchase and sale of base as the method of transfer, base adjustments by a committee in the local unit, the use of the base plan as a method of sale except when control programs were in the market, and a market-adjustment fund to pay for the base milk for which no dealer outlets could be found. A similar plan was used in smaller markets in the milkshed area.

Several changes were made in the bases allotted to producers during the time bases were used in Chicago, although most of the changes were related to the bases assigned in 1929. Bases effective in April 1929 were equal to average deliveries in September, October, and November 1928. Bases allotted in December 1929 were equal to average deliveries for these same months in 1929. In January 1931 each member might keep his old base if he had delivered it in full the previous fall, or he might accept a new base equal to 60 percent of fall deliveries in 1930. All bases were reduced 5 percent in 1932 and 10 percent in 1933. In September 1934, producers were given a chance to earn new bases equal to the average of their old base and their deliveries in June, July, and August 1934. They might elect in advance merely to keep their old base. All bases were reduced in February 1938 but the cuts were restored in July 1938. In November 1938 producers who delivered 10 percent over base from July through October received 10 percent increases, and producers who failed to deliver 80 percent of base had their bases reduced. Base, in this case, referred to the percentage of base being paid for at the top price, rather than to the so-called "100 percent" bases.

During all this period a producer who had failed to deliver a specified percentage (usually 80 but sometimes 70 percent) of his base for any 3-month period received a lower base. The average volume he did deliver during the 3 months became his new base until 1936. In that year the old base was reduced to the extent that his deliveries had fallen below the 70 or 80 percent. The base relinquished in this way was redistributed in the producer's local unit by its base committee. This was also true of the base given up by the 5 percent and the 10 percent reductions. The amount was reallocated to low-base producers.

The local committees were given authority in 1934 to charge for any increases in bases resulting from the redistribution. That year they charged as high as $11 per daily pound. In 1935 a uniform price of $1 per pound was established for these increases,

with 95 cents of this to go back to the producer who lost the base. In 1936 all members were permitted to sell up to 25 percent of their base to the association at 95 cents per daily pound, for resale at $1 per pound. Sale of bases was suspended for a while in August 1937 but was resumed in 1938 and 1939.

Rules regarding the transfer of base with the herd were varied. Generally, the entire herd had to be transferred before the base went with the herd, and producers could not add the base of more than one purchased herd to their existing base. New producers, as a rule, received surplus prices for their first 90 days on the market, and then some specified percentage of this 90-day average as their base. In the later years, of course, they might purchase a base.

The sum of all bases exceeded fluid milk sales in the market, and except for the first year of the plan and for 2 years from July 1936 to July 1938 the top price was paid for only a part of the base milk received. Surplus prices were paid for all other milk delivered. Except when Federal control programs were in effect 3/, both the top price and the base percentage (the same for all dealers) were negotiated by bargaining. The percentage was usually 85 or 90 percent. A unique pricing system was used from November 1935 to July 1936 under which dealers agreed to pay members one price for all their milk. This was the top price for amounts up to 85 percent of base, but was reduced by three-fourths and then later fifty-five one-hundredths of 1 cent for each percent the member's total delivery exceeded this 85 percent of base.

With bases fairly high and dealers agreeing to pay top prices for a designated percentage of base, dealers were naturally unwilling to take on an unlimited number of producers. In 1932, therefore, the association established an adjustment fund to pay the base prices to all members for whom no dealer outlet could be found. This fund was built up by making an assessment on all members, and the money was used to equalize the returns to those producers whose milk the association sold to manufacturing outlets.

Detroit

Bases were introduced into the pooling system in Detroit by the Michigan Milk Producers Association in 1923. They were used until July 1927, reintroduced in May 1930, and have been used continously since. The early base plan provided for "open" bases,

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3/ Federal programs in Chicago were in effect from August 1, 1933, to January 8, 1934; from February 5, 1934, to March 2, 1935; and from September 1, 1939, to date.

established each year as 100 percent of each producer's average deliveries during July through October of the previous year. With this plan, milk was sold to dealers at class I and class II prices. Class I prices were paid for whatever percentage of base receipts were used as fluid milk, and class II prices for all other milk received. During most of this period a "call" system was used, under which each dealer estimated his sales in advance, and the percentage of base for which the class I price would be paid was announced in advance. Errors of estimate were compensated in percentages for the following month.

The base plan reintroduced in May 1930 differed in only one respect from the plan previously used - the call system was eliminated and each producer had two or three options almost every year as to how his new base would be established. For 1930 the base might be the average of deliveries in the last 3 months of 1929; 1928 and 1929; or 1927, 1928, and 1929. For 1931, the producer might accept a new base equal to 70 percent of average deliveries in the last 3 months of 1930 or have his old base adjusted up or down by 1/3 of the difference between the old base and his 1930 fall deliveries. For 1932 each producer might retain his old base if he delivered 70 percent of it in the fall of 1931, accept the new base, or have his old one adjusted as in 1931.

The same three options were provided in 1933 and 1934, with the various percentages and the base-forming months changed somewhat. September through December was the period for 1933 and August through November for 1934. The base period for 1935, 1936, 1937, and 1938 was in each case the 4 highest of each producer's 5 low months of deliveries the previous year, with some limitation as to which months these could be, and with the same type of options as before. Entirely new bases were assigned in 1939 and again in 1940, equal in each case to average deliveries in August, September, October, and November of the previous year.

Penalties for failure to deliver the full amount of base have never been particularly stringent, since the sum of bases assigned has usually exceeded fluid sales by a sizeable margin. New producers receive base prices for a designated percentage of their deliveries for their first 3 full calendar months, the percentage depending on the season of the year, and then are assigned a base quantity. Old producers are given the option of taking the status of a new producer at any time.

Individual base adjustments and transfers are handled by a special base adjustment committee. It meets once or twice each month to receive and consider complaints or requests and has authority to grant or reject the adjustments asked. The number of such requests approaches 100 per month in the flush season, but is

negligible during the short-production months. Base may be transferred only with the entire herd, and not more than 20 pounds of daily base per cow may be included.

From May 1930 to March 1932, the base plan was used only as a pooling device in all except 2 months. Milk was sold at class I and class II prices. The class II price was paid for all excess over base, and the other sales returns were distributed as a blended price for base milk. All dealers paid into an adjustment fund and those whose class-use percentages did not yield a base price as high as the average were paid the difference from this fund so that their producers might receive the uniform base price. From March 1932 until July 1933, when the Federal program came in, the base plan was used as the method of sale. Each dealer agreed to pay the top price for all base milk received, and to take on enough producers so that base milk received would equal 110 percent (later 120 percent) of his fluid-milk sales. A lower price was paid for excess over base.

As in Chicago, the association had to divert to manufacturing outlets the milk of members for which no dealer outlet could be found under this system, and to find a source of funds with which to pay such members the base prices other members were receiving. This source was a deduction from the base price to all other producers, ranging in amounts from 5 cents to 25 cents per 100 pounds. The need for this was eliminated, of course, with the formal class price system, audited sales reports, market-wide pool, and equalization account, which were all introduced under the Federal control program and continued now under a State program. Uniform base prices each month are a blend of the class prices for the classes in which base milk is sold by all dealers combined. Uniform surplus prices are likewise a weighted average of the classes in which this milk was sold.

Pittsburgh

Bases were used by the Dairymen's Cooperative Sales Association in Pittsburgh from 1928 to 1933, and again from early in 1934 to late in 1935. The experience in Pittsburgh was notable because this was the first large market in which the base plan and the class-price system were kept entirely separate from the beginning. Also, an open base policy was followed, a market pool was used, and bases were held down to fluid-milk sales throughout most of this period. The base plan was discontinued in April 1933, but when State control came into the market in April 1934 bases were reintroduced. They were abandoned again in November 1935 when a provision for dealer pools was written into the control program.

Bases assigned each year from 1928 to 1933 were determined by taking whatever percentage of the previous fall's deliveries would make the sum of all bases equal to fluid-milk sales. "Second bases" were also assigned in the same way in 1932 to represent each producer's share in fluid-cream sales. The base-forming period was generally the 3 months of lowest market receipts of the previous year. For 1927, 1928, 1929, and 1932 this was the last 3 months of the year. In 1930 and 1931, it was September, October, and November. In 1930, 1931, and 1932, each producer's low month of deliveries outside of the 3 months was also included as a base month. Bases from April 1934 through June 1935 under the State control program were equal to average deliveries during all 12 months of 1932 and 1933. From July 1935 through October 1935, also under State control, bases were equal to deliveries during 1933 and 1934.

Milk was sold to dealers on a class-price system, with 3 or 4 separate classes and with audited sales reports during all this time. The association announced the prices to be paid to all members - one price for base and another for surplus. Dealers whose class-use value was higher than the amount due their producers paid the difference to the association, and dealers with a lower class-use value received the difference from the association. Since the sum of all bases was kept about equal to class I sales, the base price each month was about the same as the class I price.

New producers received surplus prices for all milk they delivered during their first month in the market, and then a designated percentage of their deliveries during this month became their base. This percentage varied from 30 to 70, depending on the class I percentage for the month. There was no penalty for under-base deliveries - the provision for new bases every year being sufficient to take care of this matter. Requests for individual adjustments were entertained only when the producer had suffered a loss of cows from fire, flood, or disease programs during the base period. Base could be transferred only with the entire herd. If the herd was split and dispersed, the producer might keep his base provided he returned to the market within 90 days.

Cincinnati

Regular adjustments in bases at 3-month intervals is the outstanding feature of the base plan used by the Cooperative Pure Milk Association in Cincinnati. This association has been using a base plan since January 1931, but only started the quarterly adjustment system in July 1934. Under this system, the "performed" base for the 3 months just past is calculated for every producer at the end of each calandar quarter. This figure is the average quantity of base milk delivered and cannot be higher, of course, than the assigned base the producer held. The sum of all such figures is

related to 115 percent of fluid-milk and fluid-cream sales in the fourth calendar quarter of the previous year. The result gives a percentage by which such "performed bases" must be raised (or lowered) in order to equal 115 percent of the sales figure.

Before such percentage changes are applied to determine the new assigned bases of producers, each producer is asked to name his own base for the quarter. If the base requested is the same as the base he is entitled to, or below it, the request is granted. This leaves more base for other producers, and the balance of the base is allotted to new producers, and to those who have asked for a higher base than they would have been assigned.

A special base committee is charged with responsibility for administering the plan. It formulates base rules, gives bases to new producers, approves base transfers, and handles requests for special adjustments. Since the association is engaged in retail distribution, there is no problem concerning the method of selling milk to dealers or the type of pool. It is significant, however, that under the Federal control program since early in 1938, the association has inflated its bases beyond the 115 percent relationship to make them comparable with the bases of producers belonging to other cooperatives in the markets. Three associations in the market continue to use bases although no provision is made for them in the Federal order.

Before this quarterly system was started in 1934, the association had used the bases assigned in January 1931 which were calculated on 1930 deliveries. On each succeeding January 1 through 1934, each producer who had failed in any month during the previous year to deliver full base had his base reduced by one-twelfth of his shortage. Any producer consistently over base was given an increase if it was warranted by fluid-milk and cream sales.

Since the association owns and operates its milk distributing business there are no problems with respect to the class-price system, sales audits, or type of pool. A manufacturing milk price is paid for excess over base, and a pool price considerably higher is paid for all base milk delivered. The returns to members for base milk are reduced somewhat, however, because the hauling charge is higher on base milk than on excess. Also, the capital retain made by the association is levied only on base milk deliveries.

Under the base plan used by the Cooperative Pure Milk Association, the trucking charge is higher on base milk than on excess. Also the capital retain made by the association is levied only on base-milk deliveries. A manufacturing-milk price is paid for excess over base, and a pool price considerably higher is paid for all base milk delivered.

Kansas City

Bases have been used by the Pure Milk Producers Association in Kansas City since January 1931. From that time until March 1936 the association bases were calculated according to average deliveries in 1930, with but little adjustment. When the Federal control program was started early in 1934, association members kept their old bases, and nonmembers were assigned bases which would be in line with them. The Federal program also resulted in a closer adherence by dealers to the class-price structure and to the equalization pool which had been a part of the association's sales plan.

In March 1936 the present system of bases, characterized by quarterly adjustments, was put into operation. Each producer received at that time an entirely new base equal to such percentage of his average deliveries from November 16, 1935, to February 15, 1936, as would make the sum of all bases equal to 115 percent of class I and class II sales in the last 3 months of 1935. On July 1 and October 1 all bases were adjusted by applying to each producer's average deliveries of base milk during the previous 3 months the percentage which would make the sum of all bases equal to 115 percent of class I and class II sales in the last 3 months of 1935. This adjustment has been repeated at the start of each calendar quarter, using base deliveries for the quarter just past and class I and class II sales for the last quarter of the previous calendar year.

By this plan, all producers get an equal percentage increase or decrease in base each year if sales have changed. Also, all producers who deliver their full base get an increased base at three other times during the year, if any other producers have failed to deliver full base. In addition, base increases may be granted proportionally to the producers with excess deliveries at the end of any month, if during the month class I and class II sales exceeded 105 percent of delivered base.

The plan is used with a system of three class prices and a market-wide pool under the jurisdiction of the market administrator. He is responsible also for assigning bases to new producers, and for approving transfers of assigned base between producers. He calculates and announces the surplus price to be paid all producers for milk delivered in excess of base and the uniform price to be paid all producers for base milk.

Chattanooga

Simplicity and directness are the outstanding features of the base plan used by the Chattanooga Area Milk Producers Association

in Chattanooga, Tenn., since it was started in 1932. This association operates its own surplus plant and sells milk to dealers or others on a product basis; that is, it sells whole milk at one price, sweet cream at another, sour cream at another, skim milk at another, and condensed skim at still another price.

The base-forming period each year extends from October 1 to the following March 31. During this 6-month period each member receives the blended pool price for all milk delivered. Each member then is assigned a base quantity on April 1 equal to 120 percent of his average deliveries during the base period. For the following 6 months - through September - any milk delivered in excess of this base is paid for at the sour-cream price. The remainder of the sales returns is distributed over base milk delivered. In this way, the blended price for base milk in the summer is about the same as the blended price for all milk in the winter.

New bases entirely unrelated to the bases assigned the previous year are calculated and assigned each year on April 1. New producers who come in while bases are in effect receive the surplus price for all their deliveries made during their first 15 days, and then are given a base equal to some percentage of their average deliveries during this 15-day period. Since the association handles the producer payroll itself, there is no problem of equalization accounts or type of pool. Also, since it sells the milk on a product basis, there is no problem as to the auditing of sales reports.

Connecticut Markets

Some type of base or quota system has been used by the Connecticut Milk Producers' Association in that State continuously since 1922. At the present time, it uses quotas in the pooling system for only 5 months of the year - February through June - and a blended pool price for all milk during the other 7 months. This system was started in 1937 following considerable experience with other systems.

From 1922 through 1934 producers were allowed to name their own quotas on April 1 each year. These quotas were expressed in terms of quarts per month. Each producer then was penalized 2 cents per quart for each quart his deliveries were above or below his quota. Penalty money thus obtained was pooled and distributed each month to all producers in proportion to the total payment they had already received for milk that month. In other words, each producer received a blended price each month for all his milk, but a deduction was made from the gross amount due him if he had delivered more or less than his quota. He also received an additional payment representing his share of the penalty pool.

In April 1935 each producer was assigned a quota equal to 65 percent of the highest quota he had held during the 3 previous years. Class I prices were paid then each month for whatever percentage of these "assigned" quotas was sold by the association that month as class I milk. An average surplus price was paid for other milk delivered. The same quotas were continued for each producer in 1936. A change was made, however, in the method of calculating the quota percentage, so that the percentage of quota receiving the class I price would apply to delivered quota instead of to assigned quota.

New quotas were assigned in 1937, 1938, 1939, and 1940. Also, in each of these years, quotas have been effective only for part of the year, as indicated above. The quota-forming period for each year is from July through November of the previous year. If, during this period a producer fails to deliver the total of his old quota, he receives a new one equal to his average deliveries. If his average deliveries are more than his old quota, he may receive a higher quota. However, the extent of such increases may be limited by the size of the aggregate quota lost by other members, the quantity given up by producers going out of business, and by the changes in class I sales. All quotas are rounded off to the nearest multiple of 5 quarts. The new quotas are effective February 1 each year. For the next 5 months producers will receive class I prices for a designated percentage of the quota milk delivered, and an average surplus price for the remainder. Blended prices for all milk are paid for the other 7 months.

The Quota Systems in Syracuse and Other Up-State New York Markets

In several of the up-State New York markets served by the Dairymen's League Cooperative Association, some form of quota or base system has been used since the late 1920's. In each case, as a rule, a producer receives a premium on all his milk each month, if his total deliveries are within a specified range of his quota. The amount of premium has been 20, 25, or 30 cents per 100 pounds, and the money for these premiums has been deducted from sales returns before any pool price has been calculated. Until recently the producers in Buffalo and Rochester were allowed to fix their own quota each year. In Albany and Syracuse, on the other hand, the quotas are calculated by the association according to previous deliveries.

In Syracuse where the plan has been used longer, each producer is assigned a quota for a year in advance on April 1 of each year. This quota is equal to the producer's total deliveries during the March just past. For any given month in the following year, the exact quantity of each producer's quota may be 5 or 10 or 15 percent above or below this March figure, depending on the normal

market needs in that month as compared with March. Thus, the May quota may be 115 percent of March deliveries, the July quota 100 percent, and the September quota 85 percent.

With these quotas established each producer is required to deliver more than his monthly quota from July 1 through December 31, and less than his monthly quota from January 1 through June 30, to earn any premiums. Premiums are paid, if earned, on all milk delivered - regardless of how large this quantity may be during one-half of the year, and how small during the other 6 months. March was chosen as the quota or basic month because milk receipts normally more nearly equal market needs in March than in any other month.

Miscellaneous Plans

Among the various other procedures for pooling sales returns which deserve mention in a discussion of allotment or quota plans is the "contract" system used in several California markets and probably used by dealers elsewhere. Contracts between milk buyers and sellers (producers or their cooperatives) are required in California under the State milk stabilization programs, unless there is an equalization pool in the market. This contract must specify the amount to be purchased each period and the division of this between classes. 4/ Unless a cooperative handles the payroll, this plan results in contracts between producers and dealers which set forth the amount of milk to be bought and sold, and so correspond to a base or quota system. There are no fixed rules governing the quantity of "contract" milk assigned to old producers, to new producers, or to producers as a whole. Some approach to fairness appears to be attained, however, through bargaining and negotiation.

Another procedure is the "percentage base" system. It is being used in the Alabama markets under State control and by at least one cooperative in Louisiana. The plan involves assigning a percentage to each producer as his base or quota. This percentage represents his share of the fluid sales of his dealer or association. Each pay period, then, the producer is paid the class I or top price for a quantity of milk equal to this percentage of the fluid sales of the association or dealer for that period. The individual quotas are calculated as the percentage of the total dealer or association receipts supplied by each producer in the base-forming period. Incidentally, the number of producers is relatively small in all cases where the plan is used.

4/ California Agricultural Code 1937, Div. 4 Ch. 10 - 736.3.

New percentages are assigned each year, and a specified portion of the sales is left unassigned so as to provide for new producers.

Still another procedure involves the calculation of a different base for each producer for each month or pay period of the year. There is some question as to whether this type of plan has ever been used for any length of time but it was worked out and proposed for New York City a few years ago. A producer's base for January, for example, would be the average of his shipments during January of the 2 or 3 preceding years, and so on for each other month. Base prices would be paid them for some percentage of this assigned base. The percentage is determined by fluid sales in relation to the sum of all bases and is the same for all producers in the pool.

OPERATING RESULTS OF BASE PLANS

From the fact that base plans have been used in such a high percentage of the milk markets and continue to be used in an increasing number of them, it might be safe to conclude that the plans generally have been successful to some extent. To determine to what extent and under what conditions they have been successful in the past and thus may be expected to succeed in the future is, of course, the main purpose of a study of base plans. Obviously, an appraisal of this nature must be made in the light of the objectives the plans were expected to accomplish.5/ It is important, therefore, that the objectives have been different between markets and have varied from time to time within many individual markets.

To a limited extent in all cases, and almost entirely in a few, the principal objectives of the base plans as mentioned on page 2 have been to promote more uniformity in receipts on a seasonal basis, and to provide a distribution of the sales returns among different producers which the cooperative felt would be more equitable than a straight pool. It is probably a safe conclusion that all base plans have accomplished these modest objectives. Whether they have resulted in as much uniformity in seasonal receipts as might have been desired, and whether they have caused more administrative and membership troubles than the results were worth, are other questions, beside the point temporarily.

Closely related to these two principal objectives are two other common purposes of base plans: To bring the seasonal pattern of milk receipts more closely in line with the seasonal variations in sales; and to provide a means whereby an individual producer can reduce his deliveries and obtain the benefits therefrom without fear that his reduction will be offset by the actions of other producers. These objectives have also been achieved, or at least some progress made toward them, under almost every plan, although again at the expense sometimes of added problems of administration and membership relations.

There is much more question concerning the success of base or quota plans in limiting total receipts (or at least in limiting the increases in total receipts) from year to year. In a few cases this objective seems to have been achieved, but the results are not conclusive - mainly because the figures available do not show what happened to deliveries by nonmembers, how many members resigned, and how many new producers failed to join the association under its

5/ There is no intention on the part of the authors to pass upon the economic soundness of any of these objectives, or to assume that more uniform receipts are universally desirable or that price premiums to producers for uniform deliveries are a closer approach to equity.

closed base system. Also, the figures do not show the dissatisfaction created among members by the closed base policy. In one or two cases in particular, the figures do show that when progress is made in limiting year-to-year changes or increases in receipts, it may be at the expense of seasonal uniformity. In other words, if bases are closed and producers know they are to remain closed without penalties for under-base deliveries, they may revert to the seasonal pattern they followed before bases were used.

Difficulty of Accurate Appraisals

It should be emphasized that an appraisal of the results of any particular base plan in exact and precise terms is extremely difficult. One complicating factor in such an analysis is that producers' responses to quotas may not be shown in any uniform or precise way. The plan may affect the pattern of seasonal variations to an uncertain extent or the year-to-year pattern. Part of the effect may be on the volume per producer and part on the number of producers. Part of the effect may be on the volume of milk produced and part on the volume delivered to market without a change in production.

To further complicate any such appraisal other activities of the association may have the same objective as the base plan and operate to intensify or to offset its effects. For example, the educational work with members on production, market conditions, and the base plan might be mentioned. Also, price policies of the association would be important - whether the class prices are constant throughout the year or tend to vary seasonally, and whether such prices tend to get out of line with economic conditions on a year-to-year basis. These activities might include too the tendency of the association to make important changes in the provisions of the base plan at too frequent intervals.

In addition, a number of external factors undoubtedly have a varying degree of influence on the pattern of milk production in any area. Sanitary regulations are subject to constant change, and more stringent regulations are likely to bring changes in the number of producers and in the variations in the volume of milk produced. Climatic conditions always have an important influence on milk production, and incidentally an influence which is never constant and which is difficult to measure. Prices of milk as related to prices of other commodities - the relation of milk prices to feed prices, and to prices for other farm products - and other production cost items are factors which cannot be uniformly controlled by the association.

This discussion should make it clear that more complete and detailed information and statistical data than are generally available would be necessary in order to make an accurate analysis of the

results of any base plan. This would include data for each part of the market on milk receipts and on all factors which might have affected these receipts. No analyses of this type are attempted in this report because both time and data available were limited. 6/

As a practical matter cooperative members and cooperative leaders, of course, must appraise the effectiveness of their base plans without the benefit of such refined analyses. Most all cooperative leaders, consequently, have formed rather definite conclusions regarding the results of the base or quota plan used in their market, and regarding the results which can be expected of bases or quotas. An attempt is made below to summarize some of these conclusions and observations. This summary is predicated largely on interviews with and detailed letters and published statements from officials of 16 major cooperatives, 12 of which are now using a base plan and 4 of which have had previous experience with bases.

Base Plans and Seasonal Variations

There seems to be little doubt that base plans tend to encourage less seasonal variation in milk shipments by producers. This is true whether bases are "open" or "closed," provided under the latter system there is a penalty for under-base deliveries. Without such a penalty there is a danger that with closed bases the producers may revert to wider seasonal variations. This happened in one case although deliveries had been fairly uniform seasonally for several previous years.

The encouragement of more uniform seasonal deliveries is usually brought about in two ways. First, the months of lowest receipts are made the base-forming period so that there is a real incentive to deliver as large a quantity as possible during these months. Second, the quantity for which the top price will be paid is the same for all months, and the low surplus price for any other milk discourages its delivery in such large quantities during the flush season.

The encouragement offered for more seasonal uniformity can be made more or less intense in several ways. One of these is to keep bases completely open; that is, to establish entirely new bases each year. Another is to keep the sum of all bases low enough so that a high base has more significance and so that the base price can be higher in relation to the surplus price. Another, and a very important way, is to supplement the base plan with seasonal variations in the class price -- that is, make all class prices higher in the short production season and lower in the flush months. In this connection, the base plan undoubtedly works better where it is supplemented by

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6/ A number of sources of information are listed at the end of the report from which some data on several of the markets may be obtained.

educational effort - designed to show what the plan means and how producers may adjust their dairy management to fit the plan.

It should be pointed out that none of the base plans studied has aimed at absolute seasonal uniformity in receipts. In fact, in some of the markets this is not desired at all. It is recognized that such a production pattern would not be economical dairy farm management except where barn-feeding is relied upon entirely. The incentive offered for more even deliveries, therefore, is intended only to be sufficient to encourage more fall-freshening and to compensate the producers for delivering a larger volume during the normally short season. It is not intended to offset entirely the difference in production costs (assuming such difference is known) between winter and summer milk production.

There are not conclusive data on the extent to which producers change the seasonal variations in deliveries under a base plan without changing their production pattern. In a few cases, such a shift has been encouraged by allowing members to sell their excess milk separately on their own account through outlets not deemed to be in competition with the market. There is some evidence also that producers tend to do this in violation of agreement to the contrary. There is more evidence that they tend to use more milk on the farm in the flush season when a base plan is used, and that when the incentive to deliver evenly is removed only for a short time there is a rapid shift back to high summer and low winter receipts.

Base Plans and Control of Annual Receipts

A criticism frequently made of base plans is that although they do result in more even deliveries, they tend in the process to stimulate total production and to result in higher deliveries over the year's time. Yet a number of cooperative leaders look upon their base plans more as instruments for regulating total deliveries than as ones for regulating seasonal deliveries. The consensus among the 16 leaders referred to above appeared to deny that higher total receipts are in any sense an inevitable or necessary result of a base plan, but also to question the wisdom of trying to use bases to control total receipts.

More specifically, 4 out of the 16 were convinced that their base plans had resulted in evening out month-to-month deliveries and in limiting total deliveries at the same time. Incidentally, 2 of the 4 were in markets in which bases were used for all producers, both members and nonmembers. Two others of the 16 felt that their bases had had some little effect on total deliveries, and still 2 others were convinced that bases could be used to regulate either seasonal variations or total deliveries but could not be used for both objectives at the same time.

On the other hand, the 8 remaining indicated that their bases had had no effect on total deliveries. Four of these were firmly convinced that it was dangerous to try to use bases to control total deliveries - at least without a firm degree of control over the entire market. The other 4 merely indicated that the base plans in their markets had not been used for this purpose and had had no influence in this direction.

The more immediate dangers from a "closed" base policy, which is the most frequent procedure used to try to limit total deliveries seem to be that: (1) Low-base members may leave the association; (2) the association may not get its proportionate share of the new producers; (3) producers may become dissatisfied with the system; (4) bases may come to be regarded as separate property rights rather than indications of temporary privileges in the current milk market; (5) the influence of the base plan on seasonal variations may be lost; (6) the base plan may lose flexibility; and (7) the association may be severely criticized as exercising arbitrary and monopolistic powers.

Some of the leaders seem to feel that most of these dangers can be or have been avoided in their cases. Keeping producers well informed and familiar with their base plan has been the most effective way to do this. Prohibiting the sale of base as such also seems to help. Flexibility can be increased by reasonable rules for base transfers or by use of a system of partly closed bases; that is, of bases adjustable every year but only to a limited extent. Penalties for under-base deliveries help to avoid losing the evenness feature, and reasonable or sound price policies help to avoid the criticism of arbitrary control. It must be admitted also that a much more effective job of price bargaining can be done - measuring effectiveness by the price obtained for producers - if there is available some degree of supply control. And, in view of this, the results may justify facing some of the dangers listed above. In any event, the question of the effect of bases on total deliveries is one for which the answers are strikingly different in different markets.

Base Plans and Membership Relations

One leading objective of all base or quota plans, to distribute the sales returns in a manner which the cooperatives hope will be fairer or more equitable than the straight pool, needs further discussion. With the straight pool all members of the pooling group are treated equally in distributing the returns. The classic remark that "there is no greater inequality than the equal treatment of unequals" is one of the arguments frequently used to justify the introduction of a base plan. Producers contribute unequally to the surpluses which lower the price, it is argued, and yet they share

equally in fluid and surplus sales returns. Correction of this situation has been the principal purpose of base plans in several markets, with only secondary interest presumably in the effect of the plan on milk receipts.

With this situation, it is ironical that complaints from members claiming unfair treatment and general membership troubles of all kinds almost universally increase tremendously when a base plan is introduced. Only one or two associations claim to have avoided this added trouble. All others list it as an important cause of difficulty; in several markets producer discontent has even forced the abandonment of base plans.

The reasons for these troubles are not hard to understand. It is not clear to all members that the base plan helps the entire market and perhaps results in a higher average price for all milk on the market. It is clear to them, however, that under the base plan some producers receive a higher return than before, and others receive a lower return. Unless the total returns are increased, approximately half of the producers receive lower returns. This may be more than half if the more uneven producers are smaller-volume shippers. Many of them will be opposed to the plan, even though they are given an opportunity under it to become more even shippers. In other words, the even producers complain without the plan and the uneven shippers complain with the plan.

Base plans create added membership troubles also because they make the pooling system more complicated and, therefore, more difficult for producers to understand. This indicates the desirability, first, of making the base plan as simple and as understandable as possible and, second, of making a particular effort to explain the plan to members and to keep them informed on changes in rules and procedures.

These two factors are fundamental causes of added problems in membership relations under any base plan. In addition, several other factors have been important causes in individual markets. One of these has been the rigidity of some plans as far as base transfers and individual base adjustments are concerned. Another, on the other extreme, has been too frequent changes in base rules without sufficient notice to producers before the new rules go into effect. This has resulted in accusations that association officials take advantage of their advance knowledge to obtain unduly high bases. Another cause has been the necessity for refusing base increases because sales were declining. All plans have appeared to work much more smoothly when sales have been increasing so that base increases could be granted without inflating the bases in relation to sales.

This discussion suggests some compromise as the more advisable procedure in regard to base transfers and adjustments. Too much rigidity is dangerous if there is any other sales outlet available for the producers. On the other hand, too much flexibility and attention to individual complaints weakens the base plan and leads to charges of discrimination and favoritism. Most cooperative leaders with experience along this line feel that there should be a few simple rules governing transfer and base adjustments, but that in a large market with diverse production conditions it is impossible to cover with a reasonable number of rules all the situations which will arise. At the same time it is unwise to ignore these special cases. Some provision should be made, therefore, for considering these special cases individually.

Base Plans in Separate Milk Markets

One complicating factor in appraising the effectiveness of a base or quota plan which was not mentioned at the beginning of this section, is that the results may apply only to the one market. The same general type of plan appears to work splendidly in some markets but to be entirely unsuited to another market. Part of this is a result of the manner in which the plan is administered and explained to producers, but part of it is also the result of fundamental differences between markets in production and sales conditions.

To illustrate this fact, on the production side, the fluid-milk shippers in some California markets have about 100 cows each, on the average, as compared with an average of less than 10 cows in many midwestern markets. Around some cities there is much more uniformity in the size of milking herds than around others, and more uniformity in the dairy-farm management practices, in the place of dairying in the farm organization, and in general production conditions. Climatic factors make the normal seasonal pattern in some areas strikingly different from that in other areas. Strict sanitary regulations and other factors have largely eliminated the small in-and-out dairymen from some markets, but they are an important part of other markets, especially in terms of numbers of producers. Undoubtedly the added cost to producers of making the adjustment in their production pattern called for by the base plan would vary widely between markets, and would vary among producers more in some milksheds than in others. Pressure from new producers to get in the market and the annual turn-over among producers varies widely between markets, depending to some extent on sanitary regulations.

On the sales side, the principal differences between markets, which are important to the use of base plans, are in the seasonal variations in the market needs for fluid milk or locally inspected milk, in the proportion of the market using the base plan, and in

the ability or willingness of various market agencies to find a market for the seasonal surpluses normally received. For example, some markets, largely in resort areas, have a peak in sales when receipts are highest. Other markets, especially where large schools are located, experience a severe drop in sales during the summer months. Milk for use as fluid milk, fluid cream, and ice cream must come from locally inspected farms in some cities, while in others only fluid milk must be from inspected sources. Seasonal surpluses tend to create an unsteady price situation almost every year in some markets, but to move regularly into established manufacturing outlets in others without disturbing the fluid market.

All these conditions influence the objective of the base plan in the market, and the ease and success with which it works. This is especially true of the variations in production conditions because the base plan is essentially a feature of the production or supply side of the market. Thus, several of the markets which have never used bases indicate that such a plan is fundamentally unsuited to the production conditions in their respective milksheds. In several of the markets where bases have been discontinued, the principal reason given has been that the plan placed too large a proportion of the producers under too severe a handicap. In almost every case, the base plans have tended to penalize the small-volume shippers and the so-called "grass dairymen." One cooperative leader in particular in whose market a base plan was used for several years, indicated that such a plan could not be expected to work smoothly unless the association had a selected membership of owners of fairly large herds who made dairying their main farm enterprise. Under these conditions, the base plan should help a great deal in the association's efforts to do a really effective job of supplying a large part of the market with milk.

The effects of variations in production conditions upon the success of a base plan probably help to explain why base plans sometimes appear to have worked better in smaller markets. The milkshed is smaller and there is likely to be less variation among producers in size of herds and other farm conditions. Also, a larger proportion of the producers in the market is likely to be in the association, or to be cooperating with its marketing program.

Most of the cooperative leaders referred to above were convinced that a base plan could be used successfully in a large market despite the widely varying supply conditions. Some groups of producers are severely penalized at first but one of the objects of the plan is to offer such groups an incentive to adopt a different type of production pattern. At the same time, they stressed the fact that the plan must be worked out in the light of full knowledge of all production conditions in the local milkshed, and that the plan as a whole must be flexible enough to allow for changes in production conditions and market needs.

CONCLUSIONS

Base or quota plans providing for market allotments to individual producers have been used and are being used by farmers' cooperatives in more than 100 city milk markets in the United States. These plans are used primarily as a modification of the pooling system for distributing the sales returns, with the objective of making a distribution which the cooperatives felt would be more equitable and which would encourage less variation in milk receipts from producers.

Bases or quotas are being used in markets of all sizes in all parts of the country. They are used in approximately half of the milk markets in which Federal control programs are in effect, and in many of the markets operating under State milk control programs. An almost endless number of variations of the essential idea of using marketing quotas of some kind have been worked out and tried in the various markets.

Operating results of base plans are difficult to measure, but their continued use and the opinions of cooperative leaders in markets where bases have been used lead to the conclusion that the plans have been at least partially successful in accomplishing their purposes. They appear to have been more successful in creating the distribution of sales returns which the cooperatives were seeking and in changing the seasonal variations in milk receipts than in controlling total market receipts from year to year. Opinion is sharply divided on whether base plans can be used successfully as a means of limiting year-to-year changes in total milk receipts.

From the preceding discussion, it appears that any base plan will have the best chance to accomplish these objectives smoothly and effectively if it can meet the following requirements:

1. The plan should be simple and logical so that producers can readily understand its purposes and the reasons for its various provisions.

2. The plan should be easy to administer, with definite rules to cover as many as possible of the adjustments which will be necessary.

3. The plan should be carefully designed in view of local conditions to encourage the desired changes in milk receipts without causing undesirable changes.

4. The plan should be fair to all producer groups and not encourage a type of change in the production pattern which is contrary to sound farm-management practice.

5. The plan should be flexible so that changes can be made to correct undesirable results or to meet new production conditions, but it should not be changed too frequently or without considerable advance notice to producers.

In addition to these, the following general observations appear to merit particular emphasis in connection with base or quota plans:

1. The use of any such plan should not supplant the educational work the association has been doing among producers in the interest of more efficient production and a change in the seasonality of production. The two should supplement each other and help make each more effective. The chances for successful use of the plan will be greatly increased by keeping members fully informed on its purposes and provisions.

2. The effectiveness of any such plan in encouraging less seasonal variation in milk shipments by producers will be increased also by making the class price higher in the low-production season and lower in the months of heaviest receipts.

3. The plan should not be expected and should not be used to help maintain a class price structure or price level which is economically unsound and unreasonable in view of supply and demand conditions. Its effectiveness for such a purpose is not assured and its effectiveness for other purposes is likely to be reduced.

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